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THE SASKATCHEWAN INSTITUTE OF AGROLOGISTS CELEBRATES ITS 60TH ANNIVERSARY

It is a professional regulatory body much like that which governs the activities of physicians and lawyers. After all, if an agrologist tells you there is a nutrient deficiency in your soil, you want to make sure that recommendation comes from someone whose practices are recognized as sound by his or her peers. That is precisely what the Saskatchewan Institute of Agrologists is there for, and it has been around for 60 years.

Bruce Hobin, executive director/registrar of the SIA, explains that it is his role to work with the Admissions Committee and the SIA Council to make sure that the people who become professional agrologists have the right credentials.

"We admit them initially as articling agrologists (AAG), and they move on to become professional agrologists. When members join us, there are a number of requirements they must complete before becoming professional agrologists."

When the articling requirements are successfully completed, applicants become professional agrologists, who can use the designation PAg. To maintain their professional status, SIA agrologists are required to take part in ongoing professional development.

"When you see the designation PAg, or you hear the word agrologist, you have an assurance that the person is qualified to provide agricultural advice," explains Hobin.

The Saskatchewan Institute of Agrologists (SIA) was established by The Saskatchewan Agrologists Act in 1946. The Act makes it compulsory for anyone practicing agrology in Saskatchewan to be a member of the SIA.

Agrologists have played a significant role in the development of the agricultural sector in Saskatchewan. The idea was to have a professional body with the legislated authority to protect the interests of the public in issues related to agricultural production and processing.

"When the first agrologist members were admitted, they dealt primarily with conventional production," says Hobin. "They were involved in crop and livestock production, or helping with farm management issues. But now, it seems we have a broader spectrum of agrologists."

"We have agrologists who still work in traditional agriculture, but you now have agrologists who work with environmental issues and wildlife management, and even in the oil industry, where agrologists work in soil reclamation. We also have many more agrologists who are involved with agricultural processing and the various issues related to that. So the profession has evolved in many ways."

The SIA has about 1,000 members who are professional or articling agrologists.

"We also have approximately another 40 agricultural technologists who have a diploma in agriculture and who are therefore recognized as having post-secondary training in applied agriculture."

The profession of agrology has become increasingly specialized over the years, and from that comes the fact that agrologists, like doctors, practise only in their area of expertise.

The word "agrologist" is derived from the Greek words "agros" meaning land, or farm, and "logist" meaning scientist. The term designates persons who have attained at least a university degree, and who are members of a professional institute of agrologists. The basic criterion for membership in SIA is a Bachelor's Degree in Agriculture from a recognized university. Other degrees, deemed by the council of the SIA to be equivalent to a degree in agriculture, may be accepted if an applicant indicates to the council an adequate training and knowledge of the agri-food industry. In some cases, additional training is required before the holder of an equivalent degree is deemed eligible for admission as an articling agrologist.

The largest employer of professional agrologists in Saskatchewan is Saskatchewan Agriculture and Food.

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U OF S RESEARCHERS AIM TO FAST-TRACK CHICKPEA BREEDING

Chickpeas present a significant market opportunity for Saskatchewan; however, producers face two serious production limitations: the long growing season requirement for the current chickpea varieties and the high risk of ascochyta blight, an extremely aggressive fungal disease. These are factors which crop breeding can help address, thanks in part to the contribution of the Saskatchewan Agriculture and Food (SAF) Agriculture Development Fund (ADF #20050723).

Researchers at the University of Saskatchewan are hoping to speed up the breeding process in order to save on variety development costs and to contribute to the molecular marker work that is currently being conducted there, according to crop scientist Monika Lulsdorf.

The research, which the U of S conducts in collaboration with colleagues in Australia, involves double-haploid technology. Normally, plant pollen contains only half the chromosomes necessary to produce a plant (single haploid), because half of the set comes from the father and the other half from the mother. Lulsdorf explains that double-haploid technology allows them to take immature pollen through a variety of steps and get it to regenerate into a plant. These plants are homozygous or "true breeding," meaning that, in a short amount of time, all the traits in which the researchers are interested can be fixed, and will not change from generation to generation.

"What is nice is that traits like resistance to ascochyta blight will be fixed in here," she says. "If you are looking for only one trait, it is fairly easy, but if you are looking for several different traits, and you have them all fixed all at the same time, that really helps in the end."

Double-haploid technology is commonly used for canola, barley, wheat and a range of other species, but researchers are having difficulties using this technology on pulse crops, she explains.

"Pulse crops have always been more difficult than other species to work with, and there are very few people working on pulses, which makes research even more difficult," she says. "If you look at barley, there are labs all over the world working with double-haploid technology, and this synergy—financial and scientific—is helping them make more progress, faster. Whereas here, we are trying to do this mostly on our own. This is why I have called upon an Australian colleague to help."

Lulsdorf is working with Dr. Janine Croser, a research fellow from the Centre for Legumes in Mediterranean Agriculture (CLIMA) at the University of Western Australia in Perth.

"We are just trying to develop the technology at the moment," she says. "The androgenic part—the part where the pollen divides and develops into the pro-cell—we have already. We are now focusing on the development of the pro-embryo into the plant."

Lulsdorf and her colleagues hope to have one complete protocol developed this year.

"We are hoping for one cultivar, one genotype, because once we have developed one model cultivar, things become much easier. You can start playing around with it because you know what works already. Then we can start looking at other cultivars; we can improve the system; we can make it cost-efficient."

Lulsdorf believes success would open up a world of other opportunities, but, as she says, "we have to get there first."

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PROMISING SASKATCHEWAN RESEARCH INTO NEW VACCINE STIMULANT FOR CATTLE

While the increase in antibiotic resistance in cattle continues to challenge scientists and producers around the world, researchers in Saskatchewan have identified a novel immune stimulant called CpG ODN that helps beef producers keep their herds protected from bovine respiratory diseases such as "shipping fever."

This development by the Vaccine and Infectious Disease Organization (VIDO) at the University of Saskatchewan will keep cattle healthier, while reducing the need for antibiotics.

If it is generally agreed that vaccination remains the most cost-effective method of reducing animal suffering and death losses, animals that are routinely vaccinated as they enter feedlots are still exposed to pathogens because of previous weaning, shipping and mixing before their responses to vaccines are fully developed. As a result, there is a two-to-three-week period of susceptibility. The CpG ODN vaccine stimulant counters this by dramatically improving the speed and magnitude of immunity by enhancing a number of available vaccines.

The current reliance on antibiotics has a number of downsides, according to Dr. Lorne Babiuk, Director of VIDO.

"Antibiotics are of concern because of the increase in antibiotic resistance. Livestock production is under extreme pressure to reduce the use of antibiotics so they will be available for treating human diseases."

The vaccine stimulant will reduce economic losses for producers and alleviate the suffering of animals from a variety of respiratory illnesses, while making more antibiotics available for human use.

"We develop these as platform technologies that will be beneficial to humans as well. If you reduce the use of antibiotics, you decrease resistance. The approach can be used for humans," says Dr. Babiuk. "We have been able to, first of all, improve the magnitude of immune response, then change the type and broaden the quality of the immune response, and finally reduce the amount of vaccine required. We can also reduce the injection site tissue reaction."

This project also has the potential to increase Canadian beef exports to Europe, as the European Union is taking steps to limit or ban the use of antibiotics in animal feed. They believe that, as antibiotics move through the food chain, they will lower human resistance to bacteria. They are also considering limiting or even banning live cattle and meat that has been exposed to antibiotics.

The project has received funding from Advancing Canadian Agriculture and Agri-Food Saskatchewan (ACAAFS), and VIDO has brought in a number of other partners as well.

"We work with a collaborative group from around the world," he explains, "and, as a result of our expertise and world-leading activities, we have been able to team up with research institutes and bio-pharmaceutical companies around the world."

The results so far have been impressive, and the benefits to producers are clear. Animal losses due to bovine respiratory diseases are estimated to cost \$100 million annually in Canada. If the animals do not have to expend energy fighting off an infection, their feed conversion efficiencies are increased.

ACAAFS is a five-year program which provides \$3.22 million annually to Saskatchewan projects that will position Canada's agriculture and agri-food sector at the leading edge. Funding for the ACAAFS program is provided by Agriculture and Agri-Food Canada. Application forms and information on how to apply can be found on the ACAAFS website at www.sccd.sk.ca/acaafs.

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SASKATCHEWAN PRODUCERS SEIZE OPPORTUNITIES AT MAJOR U.S. TRADE SHOW

If you are in the natural products business, this is an opportunity worth considering.

Natural Products EXPO West 2006 took place earlier this spring in Anaheim, California. Established in 1981, it is the United States' largest natural products trade show, with over 30,000 retailers, manufacturers, industry members, exhibitors and members of the media in attendance, along with 2,500 booths.

For Saskatchewan agricultural producers and marketers like Roger Provencher of Canadian Prairie Bison in Canwood, Natural Products EXPO West is an opportunity that can't be missed.

"I went to Natural Products EXPO West to meet potential customers, to get into the retail market and to look at doing some different programs for them," says Provencher. "We hope to add more value to the carcasses, which in turn will add more value for the producers." Canadian Prairie's producers are all natural producers. They must sign an affidavit saying they don't feed any growth hormones or antibiotics to their animals. The company sells mostly to the U.S., with a lesser market in Canada.

This year, Provencher's group joined forces with the Canadian Bison Association and handed out samples on location.

"We hired a couple of chefs, and we did a bison brisket and handed out, I believe, around 3,500 samples over three or four days," he says. "Visitors would come by our booth, and we would start talking about what cuts they could possibly use and exchange business cards and pamphlets. Once we got home, we followed up by e-mail and telephone. We got them more samples and, hopefully, we'll strike a deal with them and go from there."

Another Saskatchewan group that attended the show is Northern Lights Foods of La Ronge. Terry Helary, the general manager, explains there are several reasons why he attends.

"One is to look for new customers; two is to maintain relationships with existing customers; and three is to see what is new in the market. I find it is always the follow-up that makes the difference in the sale, but attending the show gives us exposure and a market presence."

California is Northern Lights' biggest U.S. market, for both their wild rice and wild mushrooms, and Helary believes it is the personal touch that helps cement the wholesaler/retailer relationship. When he is at Natural Products EXPO West, he visits the stores where their products are sold—stores like Trader Joe's. Northern Lights will even do private labelling for them.

The Saskatchewan Trade and Export Partnership (STEP) is the provincial organization that has been leading trade missions of Saskatchewan food processors to Natural Products EXPO West. Brad Michnik, Director of Trade Development for North America and Mexico, explains that significant organic, natural products and herbal supplements sectors exist in the province.

These export companies go to Natural Products EXPO West because it brings all the wholesalers, retailers, brokers and manufacturers in the industry together in Anaheim. There is also a Natural Products EXPO East held every fall on the East Coast, but the Anaheim show has proven to be the more significant of the two.

"Keep in mind that California is the birthplace of the organic, natural products movement in North America," says Michnik.

STEP has worked with Saskatchewan groups going to Natural Products EXPO West for six of the last nine years. There has always been a large complement of Canadian companies that attend the show, of which anywhere from 12 to 20 are Saskatchewan firms.

"Saskatchewan is always well represented," say Michnik. "The Saskatchewan companies that attend range from people selling organic commodities to companies selling shelf-ready products for the retail market in the southern United States. Some of the companies that attend are in the early stages of the export process. They will go down to California to learn about the market, to see what the opportunities are, and to see how they are going to take advantage of those opportunities. At the other end of the spectrum, there are companies that are already successfully marketing down there, and are looking to expand their businesses and to find additional customers."

When it comes to exporting natural agricultural products, there is nothing quite like getting your feet wet at Natural Products EXPO West.

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SHAUVAVON PULSE PRODUCERS DEVELOP LENTIL-BASED LASAGNE

The road to value-added agriculture is strewn with both rewards and hurdles. No one knows that better than Shaunavon grain producers Vicky and David Krause. They created Pulse Wise Foods to help them make the transition from producer to processor, and today they market their very own lentil and feta lasagne through the Saskatchewan Made stores in Regina and Saskatoon.

"We have a young family and a full future ahead of us," says David Krause. "We were looking at the grain industry—we knew something had to change. We grew lentils. At a Pulse Days meeting in Saskatoon a few years ago, we heard an agricultural

economics professor say that the pulse industry would overbuild the cleaning and processing facilities, and that there would be some losers, but the future after that would be in adding value to products above and beyond simply bagging and shipping."

So that is what they decided to do. With help from the Saskatchewan Food Processors Association (SFPA) and the Saskatchewan Food Industry Development Centre in Saskatoon, the Krauses developed their product, designed the packaging and labelling, and brought it to market.

Both members of this entrepreneurial couple were born and raised in a traditional grain farming environment.

"Looking back from now," Krause reflects, "we faced a lot of challenges. First, we really didn't understand business and we didn't understand food processing. So we had to learn a lot. We tried to market the product, as well as process it, and, at the same time, we were trying to raise two young kids—we have been tugging away at this for five or six years now.

"We have learned a lot about marketing and business. You hear about the successes, and about the people with the best gadget in the world, but who, for some reason, just can't get it off the ground. The key is marketing. It's neither an art nor a science, but it is a combination of both. You have to be lucky as well."

One of the challenges Pulse Wise Foods is working on right now is how to produce their product more efficiently, according to Krause.

"Our product is labour-intensive to make and, therefore, costly. Finding the right package to put it in is another major issue. We are now looking to streamline production, for it is a handmade product at the moment. Because it is so unique, you are developing a whole new grocery category as you go. Our lasagne is meatless, using lentil as the protein."

Krause feels it is only fitting that Saskatchewan producers should be able to capitalize on value-added lentil products, since the province is a world leader in lentil production. Canadians do not eat a lot of lentils, but, he notes, Pulse Canada is in the midst of researching and publicizing the health benefits of lentils and other pulses.

"In other parts of the world, people eat pulses on a daily basis. Think about it: no cholesterol, low in fat, prevention of heart disease and diabetes. Isn't it the right food for us? Our product is a heat-and-serve microwaveable meal; quite convenient."

Krause believes the secret of being successful is to never give up; to have passion; to love what you are doing.

"Never get down on yourself," he says, "but don't blame anybody else for your failures. It is all up to you. It is tough. We have cried, but we have laughed, too. Somebody said to me: when you are down and out and on the floor, when you are down there, pick something up. You might as well learn something while you are down there."

The Krause family has learned much in the process of building their company.

"The food business is very highly controlled," he says. "Finding a distributor and a retailer that wants you is all about consumer demand. That is what they want. They don't want to take something off their shelf that is making them money to put your product on."

Krause is trying to devise a way to educate consumers about lentils. Through market research, he has learned that consumers want convenience and they want wellness. They want food that will give them health benefits without sacrificing taste.

"They want something that tastes good," he says. "Otherwise, people won't eat it. That is number one."

As Pulse Wise Foods grows to tap into the demand for healthier foods, the Krause family will keep on growing as entrepreneurs also, learning how to make the best out of the resources at their disposal, while remaining stewards of valuable agricultural resources back at home in Shaunavon.

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